

Chapter 2

Threat

US forces may have to fight enemies ranging from sophisticated armored forces of Warsaw Pact and the more advanced emerging countries to unconventional forces of the Third World. The reconnaissance, surveillance, and target acquisition (RSTA) capabilities of our potential adversaries range from binoculars and night vision devices to laser and thermal imaging systems. We must focus our training, doctrine, and tactics in smoke and obscurants on degrading and potentially defeating these types of systems.

The training begins with identifying the location, types, capabilities, and employment procedures of enemy systems on the battlefield. The FM 100-2 series covers the Soviet Army and North Korean Army. The Cuban Forces Handbook, DDB-2680-62-86, dated May 1980 and similar handbooks for other countries are excellent sources of information on Third World

countries. These are excellent references for unit organization and equipment, operations and tactics, and specialized warfare.

The smoke capability of our potential adversaries ranges from field expedient methods to extensive smoke-producing equipment and organizations in the field. Clearly the most significant Threat smoke capability resides within the Soviet Union. Their continued emphasis on adapting existing smoke assets to tactical missions and the development of new smoke systems allows Soviets to employ smoke in depth and in large areas for extended periods.

Historically, the Soviets relied heavily on smoke. In many instances smoke use was directly responsible for operational success. One Soviet writing states that during an offensive action smoke screens can reduce their losses of combat vehicles by 60 percent to 80 percent. In World War II, the Soviets

established smoke lines up to 100 kilometers long, maintaining them for several days, weeks, and months.

The Soviets state that smoke carries more importance today than in World War II. This is due to the growth of highly sophisticated, long-range target acquisition systems that relatively inexpensive smoke and obscurants can defeat. They believe that smoke and obscurants can degrade and potentially defeat the use of optical, laser, night vision, and even thermal imaging systems. For this reason the Soviets plan that they will use smoke whenever and wherever the tactical situation permits.

For these reasons, our intelligence preparation of the battlefield (IPB) must include both Threat RSTA and smoke capabilities. This chapter outlines Threat RSTA and smoke employment doctrine. Chapters 3 through 5 outline doctrine and tactics to attack Threat RSTA efforts and protect the force.

Reconnaissance, Surveillance, and Target Acquisition

The effective employment of battlefield smoke and obscurants requires an understanding of Threat RSTA capabilities and how these capabilities support Threat operations. The Soviets define reconnaissance as the collection of intelligence information about the location, disposition, composition, number, armament, combat preparedness, character of activities, and intentions of the enemy in the interests of combat.

Threat RSTA encompasses all methods, such as photographic intelligence (PHOTINT), imagery intelligence (IMINT), and human intelligence (HUMINT). The most reliable methods and therefore the most used methods of RSTA are also easily defeated by smoke and obscurants. The Threat groups these methods into three major areas (aerial, ground, and artillery) that encompass the strategic, operational, and tactical depth of the battlefield.

Aerial reconnaissance sources are the satellites, front/army aviation assets, rotary-wing aircraft, and remotely piloted vehicles (RPVs).

Ground reconnaissance includes long-range reconnaissance units of front/army and divisional organizations and special reconnaissance, such as NBC, engineer, and medical reconnaissance.

Artillery reconnaissance uses artillery observation posts through direct observation, supplemented by radar, sound, and flash ranging, and

information resulting from electronic means.

Threat forces will conduct reconnaissance to acquire information on US nuclear weapons, force disposition, and intentions. In the Soviet ground forces, dedicated reconnaissance units will conduct aggressive RSTA for commanders from the front down to regiment.

Aerial Reconnaissance

Satellite, or "cosmic" reconnaissance, includes photography and television. It is controlled by the GRU (general staff's main intelligence directorate). One reconnaissance satellite version contains a video system on which images are stored and later retransmitted to Soviet ground stations.

Aerial reconnaissance is the principal method of gathering target intelligence. It provides the most timely and reliable information on the character and location of targets, particularly those in the enemy rear. Aerial reconnaissance recognizes four major categories of targets:

- Nuclear weapon systems and storage depots.
- Active and potential airfields.
- Defensive positions and systems (AD, C3, EW).
- Reserves, logistic facilities, and approaches.

Front air forces normally include an air reconnaissance regiment, but may have as many as three. These regiments are self-contained and process the information they collect. There are 24 to 40 aircraft per regiment. Their collection capabilities include fixed-frame and strip photography, infrared (IR) photography, television, and side-looking airborne radar (SLAR). An example is the FOXBAT B, which carries five nose-mounted cameras and IR linescan equipment. It provides a coverage corridor of up to 70 kilometers. The aerial television with down-link does not give the resolution of still photography, but it is near-real time. About half of the Soviet reconnaissance aircraft

can transmit their information in-flight. High-performance aircraft and helicopters can be equipped with laser range finders and designators.

Reconnaissance aircraft fly at a high speed and low altitude, out to 600 kilometers beyond the forward edge of the battle area (FEBA). However, certain reconnaissance aircraft, such as the FOXBAT B (with visual and IR cameras) and the FOXBAT D (with SLAR), may perform their missions at high altitude without having to cross their forward line of own troops (FLOT).

Front and army RSTA assets may include a squadron of drones, commonly the DR3. Drones may have vertical and side-looking cameras, using visual and IR film. A drone may also carry a video with real-time down-link, though this would reduce its range. One drone squadron could launch 20 missions a day.

Aerial reconnaissance is particularly critical to the initial air operation. Predesignated strikes are planned in detail. Maps and terrain models are used to familiarize pilots, plan approach and departure routes, and determine attack techniques and routes. The vulnerability of high-performance aircraft to ground-based air defense necessitates a low-altitude (ideally, 50 to 100 meters), high-speed approach in minimum time. The pilot has three to six seconds to identify his target. Helicopter squadrons at army and division level will fly missions in support of engineer, chemical, and artillery reconnaissance.

Ground Reconnaissance

Reconnaissance units are assigned to all echelons of the Soviet force structure, from regiment to front. Reconnaissance units are equipped with tanks, BMPs, BTRs, and BRDM2 scout cars, and reconnaissance variants of each. Specialized vehicles perform engineer and NBC reconnaissance.

The BRM is a BMP variant mounting the TALL MIKE ground surveillance radar. Some units will have the PSNR (portable information gathering station), a man-pack radar, or a mixture of both. Detailed information on the reconnaissance units' organization and equipment can be found in FM 100-2-3.

Ground reconnaissance is primarily the concern of the tactical commander at division and below. His or her interest is the enemy and terrain to the immediate front, out to 100 to 150 kilometers. Tactical ground reconnaissance units operate out to 50 kilometers in front of the division. Airborne reconnaissance teams can operate out to 100 kilometers.

The information gathered directly supports the plan of fire and maneuver. Reconnaissance units will operate as patrols of two to three vehicles. The greatest effort will be directed toward suspected enemy strength and primary axes of advance. These patrols will avoid combat if possible. They will concentrate their efforts on finding enemy units, determining their strength, disposition, and weapons. As the battle is joined, these patrols will attempt to penetrate the FEBA to report on rear area activities, movement of reserves, and location of supply routes.

In addition to dedicated reconnaissance units, the organization of the regiment in march maximizes reconnaissance. To maintain the momentum of the attack, the regiment in march allocates its combat power forward in increments of one-third. This march formation assures that the main body is not impeded by a small enemy force.

The first element is the combat reconnaissance patrol (CRP), consisting of a reinforced platoon. Engineer and NBC reconnaissance assets usually will be attached to the CRP. The CRP engages enemy units to determine strength and disposition. If the CRP cannot overcome the enemy, it will attempt to

fix the enemy in place to facilitate the employment of its parent, the forward security element (FSE), consisting of a reinforced company. Next follows the advance guard, a reinforced battalion.

Target acquisition for direct fire begins early in the battle. A PRP3, with its SMALL FRED target acquisition radar, will be found with the advance guard, if not sooner.

Most Soviet combat vehicles carry active IR for night vision and fire control; many are equipped with laser range finders. Laser range finders in vehicles and artillery units are usually Nd: YAG (Neodymium: yttrium aluminum garnett) operating in the visible spectrum at 1.06 microns. Some Third World countries are capable of and have installed thermal imagers rather than active IR optics on their com-

bat vehicles fleetwide. This capability increases the Threat, because reconnaissance and combat units will be able to detect and engage friendly units using these devices.

Artillery Reconnaissance

A network of observation posts controls artillery fire. Artillery observation posts locate targets and reference points. They transmit the data back to the firing batteries and adjust fire. Some observation posts will be located with the advance maneuver elements. Armored command and reconnaissance vehicles (ACRVs) (which function as fire direction centers as well as observation posts) carry day/night observation devices and laser range finders

for target acquisition, topographic survey equipment for location data, and a fire direction computer.

Battlefield surveillance radars also support target acquisition and fire adjustment. The PRP3 mobile observation, a BMP variant, is found in each howitzer battalion. It carries the observation devices of the ACRV and the SMALL FRED radar, which detects targets and adjusts fire out to 20 kilometers. The BIG FRED battlefield surveillance radar, mounted on an MTLB, a light transport combat vehicle, is found in the target acquisition battery of the artillery regiment. The MI2 HOPLITE from the division helicopter squadron is also used for target acquisition and fire adjustment.

Combined Arms Operations

The Soviets believe the tank to be the keystone of the combined arms operation. Their concern about NATO antitank capabilities gives them great incentive to develop

both improved and more extensive obscuration capabilities and tactics. Soviet writings often cite the Arab-Israeli War of 1973, in which ATGMs destroyed over one-third

of Israeli armored vehicles in one week. Their doctrine reflects this concern over defeating enemy antitank weapon systems.

Threat Smoke Tactics, Techniques, and Procedures

In addition to the three battlefield smoke applications, we can expect the Threat to follow several guidelines when using smoke. These include the following:

- Cover an area five times the size of the target, with the target off center within the smoke.
- Light dummy fires or use flares within the smoke to give the false impression of a hit when enemy fire falls within the smoke.
- Initiate the smoke two to three hours before starting the operation; sustain the smoke along a wide front to conceal river crossing operations.
- Place smoke on both sides of the river during crossing operations.
- Make maximum use of floating smoke pots and smoke barrels to cover the crossings.

- Use decoy smoke at one or more likely crossing sites in an attempt to deceive our forces.
- Use smoke to conceal aerial reference points.
- Use smoke to conceal important locations and possible targets such as troop concentrations, crossing sites, bridges, railroad junctions, and unloading areas.
- Screen flanks of attacking echelons.
- Use illumination rounds in conjunction with blinding smoke to destroy night vision on the objective and illuminate the target.
- Screen fronts of advancing maneuver echelons.
- Screen movement of guns and other weapon systems into firing positions and from position to position.

- Use smoke to screen the activities of engineer units when clearing minefield and to mark passages through engineer barriers.
- Use smoke to screen logistics routes and activities that are within range of our fire and observation.
- Use smoke to mark targets for aircraft, artillery preparation, and signaling purposes.
- Use blinding, camouflage, and decoy smoke to conceal the direction and time of attack to minimize losses.

Note: Reliable communication and continuous coordination among units making smoke, units using smoke, forward air warning assets, and air defense systems are essential.

Threat Offensive Smoke Use

Threat smoke doctrine states that they will use smoke whenever and wherever the tactical situation permits. The extent they use smoke in any offensive operation depends largely on the amount of time available to plan and coordinate for the use of smoke in support of the operation. Smoke usage is also dependent on other variables, such as weather, terrain, and the tactical situation. Nevertheless, we can deduce several doctrinal norms for our IPB in regard to Threat smoke use in the offense. Expect the Threat to—

- Use an intense initial artillery preparation with HE and smoke munitions fired for shock and suppression
- Use sustained HE fire to cause attrition to defenders; this also creates large quantities of dust that stay aerosolized after three to four volleys.
- Place blinding HE dust and smoke on or in front of defensive positions.
- Use smoke to deny acquisition, degrade armor or antiarmor guidance systems, and with toxic smokes create casualties.
- In the main attack area, make smoke three to five times wider than the zone of attack.
- On the Threat side of the FLOT, use smoke pots and generators and limited VEES smoke to camouflage and protect the attacking force's advance from long-range helicopter and indirect fire.
- On the US side of the FLOT, use HE-created dust, projected WP/PWP smoke, and on-board smoke to degrade acquisition and armor or antiarmor guidance systems.
- Increase artillery tempo as attack force approaches the FLOT
- Shift HE and smoke fire to isolate the zone of attack when the attacker is 400 to 1,000 meters from our defense.
- Conduct the final assault unencumbered by their own obscurants

- After a Threat attacking force passes through the FLOT to our side of the FLOT, use consecutive lines of fire with HE and WP/PWP to provide additional blinding smoke.

- Use VEES/grenades on the US side of the FLOT only on command of the company and battalion commander when required for additional protection.

Threat Smoke Example

The following example illustrates the Threat's use of smoke in the offense. The example does not include consideration of either terrain or local meteorological conditions; therefore, it is largely mission, enemy, terrain, troops, and time available (METT-T) independent. The example centers around the type, extent, and time frame in which the Threat would use obscurants. The example does not consider our countermeasures and does not represent US Army doctrine.

In meeting engagements, the Threat attempts to seize the initiative to either overwhelm or force the opponent into the defensive. These tactics generally occur when covering forces, guard forces, patrols, and units moving to contact encounter the enemy, either intentionally or unintentionally. They are normally conflicts of a few hours duration. A meeting engagement will probably occur more frequently than any other encounter and involve the least amount of deliberate use of smoke and obscurants.

A Threat reinforced motorized rifle battalion (MRB) has penetrated our defensive positions. A second-echelon unit has exploited the breakthrough by continuing the march into our rear area. At H - 9, both sides have located each other, with neither screening force large enough to initiate combat. Therefore, they remain in contact until either side can bring forward a larger force. The distance between the opposing

forward elements is 1,300 meters. The CRP is part of the reinforced motorized rifle company (MRC), which is part of a reinforced MRB. The mission of the FSE is to destroy our reconnaissance forces and to destroy or fix our lead company, thereby fixing our force in position. Twenty minutes behind the FSE is the reinforced MRB (minus the advanced guard) that is to actually conduct the attack.

At H-hour supporting artillery deploy and fire a WP round from each of two 122-millimeter guns to mark the enemy's flanks. The FSE is moving forward and will establish the FLOT along the screen line of the CRP. The advanced guard is moving forward at a rate of 30 kilometers per hour.

The artillery and mortar units begin their fire at H + 1 minute, using HE rounds on the objective. The FSE has deployed along the FLOT with its attached tank platoon in the northern sector.

At H + 9 minutes, the FSE's combat vehicles initiate camouflage smoke with their VEESs (Figure 1, next page). The artillery and mortar units increase their rate of fire. Two minutes later (H + 11 minutes) the two platoons in the northern sector shut off their VEES and fire a half volley of their smoke grenades. These two platoons will distract attention from the advanced guard, which will conduct the actual attack along a more southerly axis.

At H + 12 minutes, the MRB (-) arrives at the FLOT and attacks through the area where the two motorized rifle platoons are still generating camouflaging smoke with their VEES. Each of the two tank platoons from the attacking force now fires a half volley of grenades. The units that had previously fired their grenades to distract attention fire the rest of their grenades and begin to move forward.

At H + 13 minutes, the tanks from the main attacking formation fire the rest of their grenades as they

Table 3. Total Threat rounds used in example.

No. of Tubes	Type	Total Rounds Available	Total Rounds Used
NA	DM11 Smoke Pots	60	0
18	122-mm SP Howitzers	72 WP 1,296 HE 72 AT	56 666 0
6	120-mm Mortar	24 WP 432 HE	24 360

continue to attack forward. The feint has stalled and is now unobsured. HE rounds are still falling on the objective (Figure 2, below).

The mortar and artillery units start firing an HE/WP mix at H + 15 minutes.

At H + 16 minutes, Threat fire shifts to the rear of the defensive positions to isolate our force.

For a list of total obscurant and artillery assets used by the Threat in this example, see Table 3.

Threat Defensive Smoke Use

Threat defensive smoke use can be grouped into two broad categories. These are smoke for protection from fire and smoke to disrupt and defeat advancing forces.

Smoke for Protection

Examples of Threat smoke usage for protection include the following

- To camouflage the maneuvers of their subunits of tanks, infantry, and artillery.
- To conceal engineer activities from our observation.
- To screen replacements of first-echelon units and subunits under conditions of good visibility.
- To camouflage the approach of their subunits for counterattack.

- To ensure flank and maneuver security.
- To mislead our forces on the disposition of second echelons and reserves and planned counterattack directions.
- To conceal the withdrawal of the battle outpost.
- To counter our reconnaissance, intelligence, target acquisition, and weapon guidance and control systems.
- To protect targets from laser designators.
- To blind our observation posts and forward observers.
- To conceal engineer breaching operations.
- To conceal aerial reference points.
- To defeat the light and heat effects of nuclear weapons.

Smoke to Disrupt and Defeat Advancing Forces

The Threat also will use smoke while in the defense to slow, disrupt, and defeat our advancing forces. Several Threat writings expressed concern over identifying targets set against forest or brush backgrounds. For this reason, the Threat developed techniques involving the use of smoke and illumination rounds to serve as an artificial background. This makes target identification easier. These techniques involve firing mortar and/or artillery smoke rounds 50 to 100 meters beyond our advancing forces. Then they place illumination rounds just

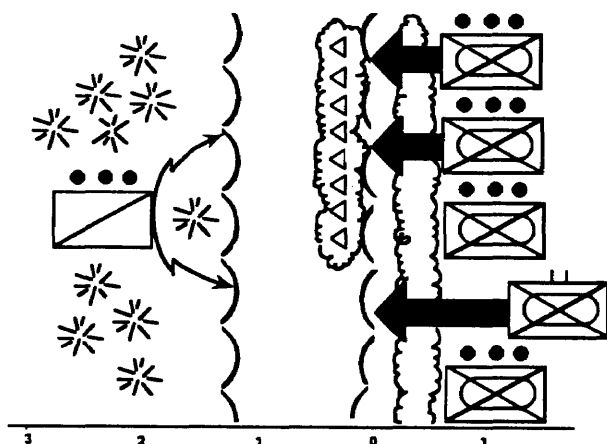


Figure 1. FSE vehicles start the VEESS smoke while artillery prepares the objective with HE, thus concealing the movement of the MRB as it prepares to attack through the FSE.

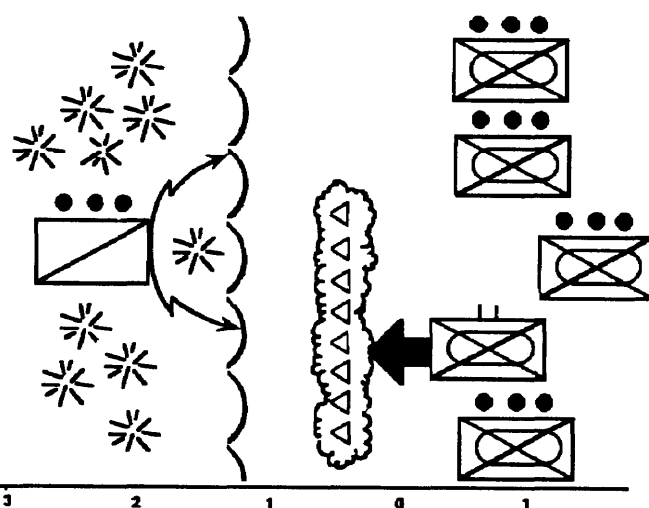


Figure 2. The FSE vehicles stop making smoke, and the MRB emerges from the smoke in position to assault the objective.

beyond the smoke to illuminate the background from the rear. This creates favorable conditions for observation and acquisition.

Also, Threat doctrine states that smoke deprives our units, when shrouded in smoke, of the capability to conduct observation of the field of battle. Smoke will make fire control and navigation more difficult. As a result, our attacking forces can stray off course from the specified directions and get mixed up with each other. There is potential for us to reduce or not aim our fire, creating favorable conditions for Threat second echelons and reserves to deploy, seize the initiative, and counterattack.

Threat Smoke Example

The best illustration of Threat smoke use in the defense is a Threat hasty defense versus a friendly deliberate attack. In the following scenario, Threat forces have attacked and are well within our territory. Threat forces have already made an unsuccessful attempt to attack from a position in contact.

The Threat force commander is preparing to conduct an attack from a position in contact. Before he can initiate this attack we attack. Two minutes after our forces begin their preparatory fire, Threat artillery uses counterbattery fire with HE onto our scout platoon.

When their forces have identified our axis of advance, they begin to establish an obscuring line, using WP and illumination rounds approximately 150 to 200 meters in front of our FLOT. When our attackers emerge from the smoke, Threat forces engage them with ATGM weapon systems.

The Threat will establish a second obscuring line approximately 900 meters in front of our FLOT, using HE and WP fire. Again, ATGM fire will engage our attacking forces when we emerge from the smoke. As our forces reach the point 1,000 meters from the Threat's FLOT, they will engage us with HE munitions from a 122-millimeter multiple rocket launcher.

Commander's Considerations

Even the most sophisticated weapon systems are limited by terrain and weather. Prior planning by the S2/G2, S3/G3, and the chemical officer can increase the limitations of enemy systems with man-made obscurants. The commander will have to decide how smoke and obscurants will affect his ability to conduct the direct fire fight. Given the various types of EO devices and the number of visual and bispectral obscurants that will be common on any future battlefield, the answer to this question is not easy. The Soviets may not have thermal imagery sights on their weapon systems. However, other potential adversaries are attempting to acquire or already have the systems. During any future conflict, you must know your enemy. "What?" "When?" "Where?" "How?" and "With how many?" will always be the questions to answer. Other PIRs to determine the effects of obscurants are the—

- EO system capabilities of the enemy force.
- Extent of their employment: whether on reconnaissance systems, direct fire systems, or all systems.
- Smoke delivery capabilities of the enemy force.

- Extent of enemy smoke employment.

- Directed-energy weapon capabilities of the enemy force.

We use smoke and obscurants to attack Threat EO systems and to protect our force. Smoke and obscurants can change the number of effective weapon systems available to either force. Once the commander decides to use smoke and obscurants, the outcome of the battle and the proficiency of his intelligence, operations, and chemical officers will determine the effectiveness of his weapons.

The four examples in Figure 3, on the next page, illustrate how smoke affects the number of enemy weapon systems that can engage the combat battalion. Example 1 depicts the force ratio when smoke is not used. In this example, the standard force ratio is Threat forces 6.4:1 over friendly forces. In examples 2 through 4, the same size force uses equal amounts of smoke and puts it in the same location. However, the force ratio changes in each example based on the relative abilities of opposing weapon systems to see through the smoke and engage targets.

Example 2 shows that the Threat use of smoke degrades the enemy's own force combat power when we have ATGMs with thermal sights (for example, TOW II). TOW II can see and shoot through most smokes. This increases our force ratio (2.5:1) over that depicted in example 1 (1:6.4) by removing all Threat long-range direct fire weapons while not significantly degrading friendly long-range tank main gun (M1) and missile shots (IFV and ITV).

In example 3, we use smoke against a high-technology threat. Our use of smoke degrades the Threat's combat power when we have the TOW II. The force ratios are the same as in example 2. In example 4, we use smoke against a low-technology threat. This eliminates the Threat's ability to fight the direct fire fight since none of the enemy's long-range fire systems can see through smoke. In this case, our force ratio significantly increases (8:1). Friendly forces are able to engage the Threat's entire force.

We could describe an infinite number of combinations of smoke and weapon usage; therefore, com-

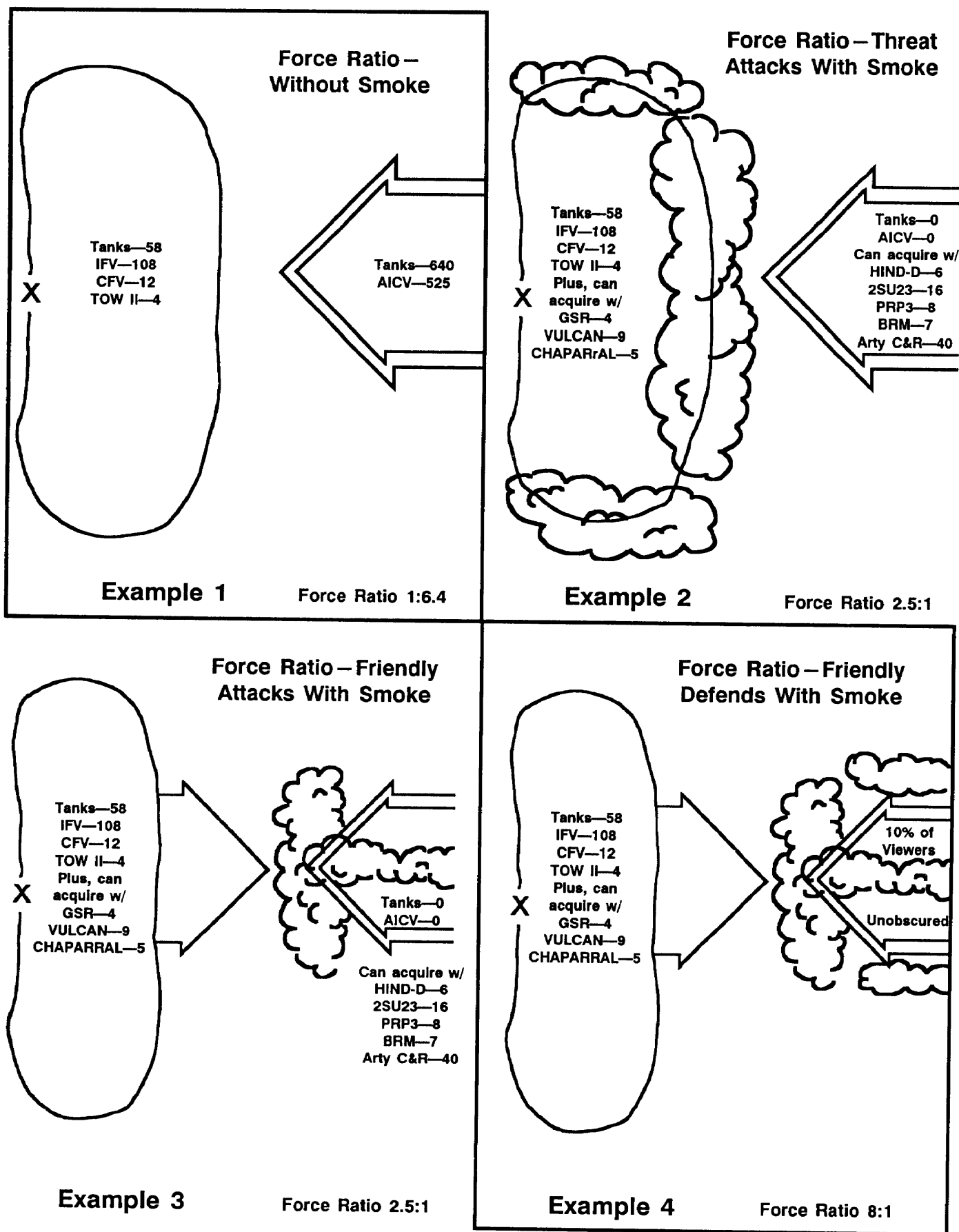


Figure 3. How smoke can change force ratios in the attack and defense.

manders must consider the following principles when using smoke:

- Smoke usage can change the number of effective weapon systems available to either force.
- Smoke effectiveness is directly related to the relative ability of

Threat direct fire systems to see and shoot through smoke.

- Employing smoke improperly can degrade friendly combat potential. When in doubt, employ smoke only when you can see and fire through it. Know your ability and that of

your enemy to see and fire through smoke. Plan the battle accordingly and never leave smoke employment to chance.

US Countermeasures to Threat Use of Smoke

Threat smoke and obscurant use has the potential for significantly degrading both our defensive and offensive operations. In general, there are two options available to counter enemy smoke use: Move to alternate positions on the battlefield to continue unimpaired operations, or use EO devices that allow operations to continue under smoke.

Our forces must first understand Threat doctrine regarding use of smoke and obscurants to anticipate when and where the Threat will employ them on the battlefield. Next, our commanders must train their units to operate in periods of limited visibility where target acquisition, navigation, and command and control are confusing and difficult. Finally, we must train and use tactics, techniques, and procedures that overcome or minimize the effectiveness of Threat smoke and obscurant usage.

Obstacles

Obstacles placed along the enemy's most likely avenue of advance can slow them, disrupting their timetables. Preplanned fire on these positions can be an effective means of engaging the enemy even in dense concentrations of smoke.

Acquisition devices that are less sensitive to smoke and obscurants can acquire the enemy at choke points and/or barriers and then direct engagement by direct and indirect fire. Obstacles can delay one element of the attacking force, drawing an adjacent element into an engagement area, unable to receive supporting fire. Separation of forces may also occur due to the enemy's own use of smoke.

Dispersion

Dispersing our forces laterally and in depth places a greater burden on attacking fire. Combining dispersion with rigorous counterreconnaissance measures forces the Threat to expend more resources and take greater risks in conducting attacks. The more dispersed you are, the more difficult and costly it is for the Threat to bring blinding smoke fire on your positions. Additionally, dispersing in depth aids in obtaining flanking fire where the Threat smoke is much less concentrated.

Deception

Tactical deception can cause the Threat to ineffectively use smoke assets. For example, an effective ruse might cause the enemy to expend greater resources in attempting to blind friendly gunners and camouflage tank movement. This would reduce overall smoke effectiveness. Using deception means may also cause the enemy to attack in the wrong direction and become silhouetted against their own smoke, allowing us to effectively engage their force without smoke degrading our line of sight.

Friendly Countersmoke

Friendly forces can use smoke and obscurants to counter enemy use of smoke as control measures or phase lines. Friendly visual obscurants can flood the area between friendly defensive positions and enemy smoke lines to disorient the enemy and deceive them as to the actual battle positions. At the same time, friendly units can engage the enemy

using thermal imagers and direct fire weapon systems.

Engagement of Enemy Forces in March Formation

The Threat does not plan as much smoke to protect the force while they are still behind the FLOT. If we engage enemy march formations, less enemy smoke use should enhance our fire.

Limited Visibility Positions

Threat doctrine calls for the Threat to lift all smoke when they come within 1,000 meters of their objective. Using alternate positions forward of your main defense will cause attrition in their attacking force and disrupt their timetables, creating surprise and confusion when they emerge from their final smoke screen. However, the use of any alternate positions increases the need for countersurveillance and counterreconnaissance measures.

Occupation of reverse slope positions coupled with alternate or dummy positions on the forward slope can cause the enemy to waste artillery assets and give friendly defenders more time to react when enemy attackers emerge from their own smoke.

Stay-Behind Forces

Stay-behind forces using nonlinear tactics can engage an enemy from their flanks and rear where they are often unobserved.

Positioning of Observers and Observation Devices

Position forward observers, warning systems, and ground/vehicle laser locator designators (G/VLLDs) where they are less likely to encounter obscuration during the battle. The highest point of a battle position normally offers the best lines of sight for laser designators. However, because of the vulnerability of these G/VLLDs to smoke and obscurants, commanders should attempt to avoid blinding by placing these devices on the flanks of a battle position.

Targeting of Enemy Smoke Assets

In addition to passive countermeasures, we can also take active steps to reduce the obscurant threat. Using IPB with a thorough understanding of how the enemy employs smoke assets, we can determine the location of those smoke assets. Once located, enemy artillery and smoke generator units are extremely vulnerable to friendly fire.

Ground Surveillance Radar

Employ ground surveillance radar (GSR) with maneuver elements to direct, identify, and locate targets in smoke. Ensure our own obscurant operations do not mask GSRs with millimeter wave obscurants and that GSRs can continue to provide targeting data to commanders when smoke obscures other surveillance means.

Use of Threat Smoke to Conceal Our Maneuver

When the Threat uses smoke between their forces and ours, we can exploit the fact that they are as likely to be unable to see through it as we. We can use their smoke to aid in obtaining surprise for our own attack or counterattack.

Use of Friendly Aviation

Use friendly aviation assets to identify gaps in smoke coverage. Target hand-off procedures must facilitate air and ground target engagement.

Preplanned Disengagements

Execute preplanned disengagement based on remote signal devices rather than visual cues. Use a thorough IPB to establish the key event for disengagement on your decision support templates.

Air Defense Positions

Position air defense assets where they obtain the most benefit from enemy smoke. Emplace systems requiring visual target acquisition (for example, Vulcan and Stinger) on high ground clear of the smoke. Use them to look over the smoke and engage low-flying helicopters and aircraft that silhouette against the smoke. Emplace air defense systems using thermal or millimeter wave acquisition in the smoke to mask missile launch points.